



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/518,965

08/01/2005

Charles Yang

1321-14 PCT US

2996

28249 7590 09/25/2008

DILWORTH & BARRESE, LLP  
333 EARLE OVINGTON BLVD.  
SUITE 702  
UNIONDALE, NY 11553

EXAMINER

LEE, DORIS L

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

09/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/518,965	<b>Applicant(s)</b> YANG ET AL.	
	<b>Examiner</b> Doris L. Lee	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. All outstanding objections and rejections, except for those maintained below, are withdrawn in light of applicant's amendment filed on June 16, 2008
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on June 16, 2008. Thus, the following action is properly made final.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claim 1** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicant has amended claim 1 to read "optionally a curing catalyst", however, the specification (page 3, lines 10-15) clearly state that the curing catalyst is a mandatory component of the composition. The inversion of what is mandatory and what is optional runs counter to the written description requirement.

#### ***Claim Rejections - 35 USC § 103***

6. **Claims 1-3, 5-6, 8-11, 15-18 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wright (US 3,639,096)** in view of **Fearing (US 4,335,178)**.

Art Unit: 1796

**Regarding claims 1, 8-11 and 16**, Wright teaches a composition, for treating a cellulosic material (abstract) which comprises:

- A melamine-formaldehyde resin (abstract)
- Dimethylol-4,5-dihydroxyethyleneurea (DMDHEU) as the n-methylol functional resin (abstract)
- a curing catalyst (abstract)

Wright also teaches that that other additives may be added to the composition to provide desired special effects (col. 4, lines 45-46), however, Wright fails to teach the addition of a hydroxyl-functional phosphorus ester containing at least two phosphorus atoms therein.

Fearing teaches that textiles, such as cotton (col. 9, lines 40-45) can be treated with a poly (oxyorganophosphate/phosphonate) (abstract) which has hydroxyl functional groups (col. 5, lines 15-25).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the phosphorus ester of Fearing in the composition of Wright and the motivation to do so would have been to make the textile flame retardant (Fearing, abstract). They are combinable because they are both concerned with the same field of endeavor, namely cellulosic materials with coatings. Absent objective evidence to the contrary and based upon the teachings of the prior art, there would have been a reasonable expectation of success.

**Regarding claim 2**, Wright teaches that ammonium chloride can be used as the curing catalyst (col. 4, line 17).

**Regarding claims 3 and 5**, Wright teaches that a Lewis acid catalyst (magnesium chloride) and a carboxylic acid (maleic acid) can be used as curing catalyst (col. 4, lines 14-21). However, Wright fails to teach that they are used as a mixture.

It is well settled that it is *prima facie* obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. *In re Lindner* 457 F.2d 506,509, 173 USPQ 356, 359 (CCPA 1972). Also, case law holds that “it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art.” *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

**Regarding claim 6**, Wright teaches that phosphoric acid can be used as the curing catalyst (col. 4, line 17).

**Regarding claims 15, 17-18, and 20**, modified Wright teaches that the hydroxyl-functional phosphorus ester has the formula as elucidated in the present claim (Fearing, abstract).

7. **Claims 4 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wright (US 3,639,096)** in view of **Fearing (US 4,335,178)** and **Weil et al (US 3,746,572)**.

The discussion regarding Wright and Fearing in paragraph 6 above is incorporated here by reference.

**Regarding claim 4**, as discussed in the rejection of claim 3, Wright claims that magnesium chloride can be mixed with carboxylic acids such as maleic acid (col. 4, lines 14-21) as a curing catalyst, however, Wright fails to teach that the carboxylic acid component is citric acid.

Weil teaches a flame retardant textile finish (abstract) in which a phosphorus compound is used as the flame retardant (col. 3, lines 15-25) and a n-methylol functional resin (DMDHEU) is used (col. 6, line 30-40). Weil also teaches that acids such as maleic acid and citric acid as well as Lewis acids such as magnesium chloride can be used (col. 6, lines 45-65).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the citric acid of Weil in place of the maleic acid of Wright. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045).

**Regarding claim 19**, modified Wright teaches that the hydroxyl-functional phosphorus ester has the formula as elucidated in the present claim (Fearing, abstract).

8. **Claims 7, 12 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wright (US 3,639,096)** in view of **Fearing (US 4,335,178)**, **Wu et al "Comparison of Different Organophosphorus Flame Retardants Agent for Cotton", Polymer Degradation and Stability 92 (2007) 363-369** and **Fesman et al (EP 0 138 204 A1)**.

The discussion regarding Wright and Fearing in paragraph 6 above is incorporated here by reference.

**Regarding claim 7**, the examiner presents evidentiary support to indicate that the poly (oxyorganophosphate/phosphonate) compound of Fearing is the mixed phosphate/phosphonate ester CAS 70715-06-09 compound. As noted in the reply filed on June 16, 2008, applicant acknowledges that the mixed phosphate/phosphonate ester CAS 70715-06-09 is sold under the trade name "Fyroltex HP" (page 9, paragraph 2). As evidenced by Wu, CAS 70715-06-09 and "Fryoltex HP" also have another trade name, "Fyrol 51" (Page 364, section 2.1). As evidenced by Fesman, Fyrol 51 is the flame retardant elucidated in Fearing US 4,335,178 (page 1, lines 25-30), therefore, modified Wright meets the limitations as presently claimed.

**Regarding claims 12 and 14**, Wright teaches that ammonium chloride or phosphoric acid can be used as the curing catalyst (col. 4, line 17). Please see the rejection of claim 7 where the examiner presents evidentiary support to indicate that the poly(oxyorganophosphate/phosphonate) compound of Fearing is the mixed phosphate/phosphonate ester CAS 70715-06-09 compound.

9. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Wright (US 3,639,096)** in view of **Fearing (US 4,335,178)**, **Weil et al (US 3,746,572)**, **Wu et al "Comparison of Different Organophosphorus Flame Retardants Agent for Cotton", Polymer Degradation and Stability 92 (2007) 363-369** and **Fesman et al (EP 0 138 204 A1)**.

The discussion regarding Wright and Fearing in paragraph 6 above is incorporated here by reference.

**Regarding claim 13**, as discussed in the rejection of claim 3, Wright claims that magnesium chloride can be mixed with carboxylic acids such as maleic acid (col. 4, lines 14-21) as a curing catalyst, however, Wright fails to teach that the carboxylic acid component is citric acid.

Weil teaches a flame retardant textile finish (abstract) in which a phosphorus compound is used as the flame retardant (col. 3, lines 15-25) and a n-methylol functional resin (DMDHEU) is used (col. 6, line 30-40). Weil also teaches that acids such as maleic acid and citric acid as well as Lewis acids such as magnesium chloride can be used (col. 6, lines 45-65).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the citric acid of Weil in place of the maleic acid of Wright. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045).

Please see the rejection of claim 7 where the examiner presents evidentiary support to indicate that the poly(oxyorganophosphate/phosphonate) compound of Fearing is the mixed phosphate/phosphonate ester CAS 70715-06-09 compound.

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. It is noted that Fearing (US 4,335,187) is still used as prior art in the present rejection, but is no longer used as the primary reference in the newly presented 103 rejections above.



***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doris L. Lee whose telephone number is (571)270-3872. The examiner can normally be reached on Monday - Thursday 7:30 am to 5 pm and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Doris L Lee/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796